AMENDMENT TO THE CLAIMS

Please amend the presently pending claims as follows:

1-18. (Canceled).

19. (Currently Amended) Method of controlling data packet traffic at input of a network, the traffic comprising N streams and/or sub-streams which are each associated with a priority level, ~~N=2~~ $N \geq 2$, each of the packets being marked with the priority level associated with the stream or sub-stream to which said packet belongs, wherein the method comprises:

a step of arrival of a packet and obtaining its priority level,

a step ~~for~~ of assigning tokens to said packet, if tokens are available for said packet, implementing a token bucket mechanism with N operating levels with N token buffers, each comprising a number of available tokens, the tokens of each of the N token buffers being used to process one of the N priority levels, wherein the tokens are assigned or not assigned to said packet depending on the tokens available at least in the token buffer used to process the priority level of said packet,

a step of~~each of the packets being accepted~~ accepting said packet in a buffer forming a means for managing a queue, if the packet has been assigned tokens,

a step of rejecting said packet, if it has not been assigned tokens~~or rejected depending on whether or not it is possible for tokens to be assigned to the packet depending on the tokens available at least in the token buffer used to process the priority level of said packet~~.

20. (Previously Presented) Method according to claim 19, wherein the traffic comprises N sub-streams each corresponding to one of the N hierarchical levels of a hierarchical stream or an aggregate of hierarchical streams.

21. (Previously Presented) Method according to claim 19, wherein the traffic comprises N sub-streams each corresponding to one of the N types of images of a multimedia stream or of an aggregate of multimedia streams.

22. (Previously Presented) Method according to claim 19, wherein the traffic comprises N streams each corresponding to one of the streams of a multiplex of at least two streams.

23. (Previously Presented) Method according to claim 19, wherein the traffic comprises N streams and/or sub-streams belong to a same class of service.

24. (Previously Presented) Method according to claim 19, wherein the rejected packets are discarded.

25. (Previously Presented) Method according to claim 19, wherein the network is of an IP or equivalent type.

26. (Previously Presented) Method according to claim 19, wherein each of the N levels of operation of a token bucket mechanism is managed by a regulator $b_i(r_i, bm_i)$, $i \in \{1 \text{ to } N\}$, with:

r_i as the nominal bit rate of the regulator;

bm_i as the maximum size of the token buffer of the regulator;

$b_i(t)$ as the instantaneous value of the filling of the token buffer of the regulator.

27. (Previously Presented) Method according to claim 19, wherein the tokens of the N token buffers are shared between the N priority levels, and a packet with priority level i can be assigned tokens from a token buffer associated with a priority level j having lower priority when the tokens available in the token buffer of the priority level i are not sufficient.

28. (Previously Presented) Method according to claim 27 wherein, for each priority level apart from the priority level having the highest priority, a quantity of tokens reserved exclusively for the packets having said priority level is guaranteed.

29. (Previously Presented) Method according to claim 27, wherein the assigning of tokens to a packet of priority level i is done in a discontinuous packet mode and the method comprises assigning:

either tokens available in the token buffer of priority level i;

or tokens available in a token buffer of a lower priority level j, when the tokens available in the token buffer of priority level i are not sufficient.

30. (Previously Presented) Method according to claim 27, wherein the assigning of tokens to a packet of priority level i is done in a continuous bit mode and the method comprises assigning:

tokens available in the token buffer of priority level i;

and, as a complement, tokens available in at least one token buffer of priority level j having lower priority, when the tokens available in the token buffer of priority level i are not sufficient.

31. (Previously Presented) Method according to claim 19, wherein :

the packets accepted by the token bucket mechanism with N operating levels are placed in a queue, and

said method furthermore comprises a step for implementing a token bucket mechanism with only one level of operation with only one token buffer, so as to take the packets contained in the queue and send them on the network in carrying out a smoothing of the traffic by limiting the instantaneous bit rate to a value acceptable by the network.

32. (Currently Amended) A computer ~~program comprising program code~~ readable medium encoded with computer executable instructions for the execution of ~~the steps of the~~ a method ~~according to claim 19~~ of controlling data packet traffic at input of a network, when said ~~program is~~ instructions are executed on a computer, wherein the traffic comprises N streams and/or sub-streams which are each associated with a priority level, $N \geq 2$, each of the packets being marked with the priority level associated with the stream or sub-stream to which said packet belongs, wherein the method comprises:

a step of arrival of a packet and obtaining its priority level;

a step of assigning tokens to said packet, if tokens are available for said packet, implementing a token bucket mechanism with N operating levels with N token buffers, each comprising a number of available tokens, the tokens of each of the N token buffers being used to process one of the N priority levels, wherein the tokens are assigned or not assigned to said packet depending on the tokens available at least in the token buffer used to process the priority level of said packet;

a step of accepting said packet in a buffer forming a means for managing a queue, if the packet has been assigned tokens;

a step of rejecting said packet, if it has not been assigned tokens.

33. (Currently Amended) Device for controlling data packet traffic at input of a network, the traffic comprising N streams and/or sub-streams which are each associated with a priority level, ~~N 2~~ $N \geq 2$, each of the packets being marked with the priority level

associated with the streams or sub-stream to which said packet belongs, wherein said device comprises:

means for receiving a packet and obtaining its priority level;

means for assigning tokens to said packet, if tokens are available for said packet, implementing a token bucket mechanism with N operating levels with N token buffers, each comprising a number of available tokens, the tokens of each of the N token buffers being used to process one of the N priority levels, wherein the tokens are assigned or not assigned to said packet depending on the tokens available at least in the token buffer used to process the priority level of said packet;~~each of the packets being accepted or rejected depending on whether or not it is possible for tokens to be assigned to it depending on the tokens available at least in the token buffer used to process the priority level of said packet~~

means for accepting said packet in a buffer forming a means for managing a queue, if the packet has been assigned tokens; and

means for rejecting said packet, if it has not been assigned tokens.

34. (Previously Presented) Device according to claim 33, comprising means for sharing tokens of the N token buffers between the N priority levels, a priority i level packet being possibly assigned tokens from a token buffer associated with a priority level j having lower priority when the tokens available in the token buffer having priority level i are not sufficient.

35. (Previously Presented) Device according to claim 34 wherein, for each priority level apart from the highest priority level, said sharing means include means for ensuring a quantity of tokens (K_j) reserved exclusively for the packets possessing said priority level.

36. (Previously Presented) Network equipment comprising a control device according to claim 33, wherein said network equipment belongs to the group comprising:

network equipment located between a network of an application or service provider and a network of a network service provider, constituting said network at whose input data packet traffic is controlled; and

routers included in the nodes of a network of a network service provider, constituting said network at whose input a data packet traffic is controlled.

37. (Currently Amended) Device for controlling data packet traffic at an input of a network, the traffic comprising N streams and/or sub-streams which are each associated with a priority level, ~~N 2~~ N ≥ 2, each of the packets being marked with the priority level associated with the streams or sub-stream to which said packet belongs, wherein said device comprises:

means for receiving a packet and obtaining its priority level;

a token bucket, which assigns tokens to said packet, if tokens are available for said packet, wherein the token buffer has ~~with~~ N operating levels and N token buffers, each comprising a number of available tokens, the tokens of each of the N token buffers being used to process one of the N priority levels, wherein the tokens are assigned or not assigned to said packet depending on the tokens available at least in the token buffer used to process the priority level of said packet;~~each of the packets being accepted or rejected depending on whether or not it is possible for tokens to be assigned to it depending on the tokens available at least in the token buffer used to process the priority level of said packet~~

means for accepting said packet in a buffer forming a means for managing a queue, if the packet has been assigned tokens; and

means for rejecting said packet, if it has not been assigned tokens.